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THE ANALYSIS OF 598 CASES OF NOSOCOMIAL INFECTIONS

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Purpose: To understand the distribution and characteristics of nosocomial infections in a newly opened university teaching hospital and to get the baseline data for that.

Methods: The hospital infection control team used prospective and retrospective method to carry out surveillance of nosocomial infections occurred from April, 2012 to June, 2014. The hospital self-designed forms had been applied to collect the data including patients' general information, infection sites, pathogens and risk factors of infections, and antibiotic use.

Results

1. The case of nosocomial infections occurred was 598, the infection rate was 1.36%.
2. The top five wards for infection rates in order were ICU, Orthopedics, Geriatrics, Hematology, Neurology and Neurosurgery.
3. The top five sites for infection were the lower respiratory tract, Urinary tract, Surgical Site, blood, the upper respiratory tract.
4. The top five pathogens were *Acinetobacter baumannii*, *Klebsiella pneumoniae*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Staphylococcus aureus*.
5. 55.29% used urinary catheter; 36.93% admitted to the ICU; 34.13% used immunosuppressive drugs and hormones; 33.26% used tracheotomy; 29.16% used ventilator; 23.76% used intravenous; 14.90% used Chemotherapy.
6. 97.5% used antibiotics: 86.62% for treatment, 6.86% for prevention, 6.52% for treatment and prevention combined.
7. 76.76% contracting nosocomial infections led to aggravation, 2.17% led to death. Infected patients' average length of stay was 32.9 days compare to ordinary patients' 11.43 days.

Conclusions: The data above showed that the distribution of nosocomial infections had no relationship with gender, but age was correlated; Patients with nosocomial infections was aggravation and extended their stay in the hospital. Also the nosocomial infections surveillance helped establish the baseline data for the newly opened hospital and identified the high risk factors, patients and departments. It also provided reliable evidence for the future infection control interventions.

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SURVEILLANCE ON CATHETER-ASSOCIATED URINARY TRACT INFECTION IN INTENSIVE CARE UNITS IN SHANGHAI, CHINA: A RETROSPECTIVE OBSERVATIONAL STUDY

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Background: Catheter-associated urinary tract infection (CAUTI) is the most common healthcare-associated infection in ICU. However, data on CAUTIs of ICU lacks in China. This study aims to describe the epidemiology and risk factors of CAUTI in Shanghai, China.

Method: A prospective CAUTI surveillance program was conducted from January 2009 to December 2013 in 150 ICUs of 67 hospitals in Shanghai, China. Data were reported monthly to the Municipal Healthcare-associated Infection Control Center. Criteria and Indicators are similar to the CDC's definition. CAUTI rates (per 1,000 catheter-days) were calculated. Poisson regression model was used to assess the Relative Risk (RR) of variants.

Results: Data on 1,168,605 patient-days and 2,129,100 catheter-days were evaluated. Overall catheter utilization ratio was 55%. Catheter utilization was significantly higher in surgical ICU compared with other ICUs. A total of 3,665 CAUTIs were observed (CAUTI rate of 3.1 per 1,000 catheter-days). The rate was highest in general ICU (4.8 per 1,000 catheter-days). The most common pathogen isolated was *Candida* spp. (30.0%), followed by *Enterococcus* spp. (19.7%) and *Escherichia coli* (12.1%). Female sex (RR

= 1.34; 95%CI = 1.23-1.47), longer hospital stay (≥ 15 days: OR = 9.37; 95%CI = 7.68-11.42) and Level-2 hospital (OR = 1.19; 95%CI = 1.09-1.30) were associated with CAUTI.

Conclusions: CAUTI rates of ICU in Shanghai has decreased these years. Targeted intervention still need to be carried out, especially in specific types of ICU, to reduce CAUTI.

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COMPARATIVE STUDY OF SURVEILLANCE METHOD OF HEALTHCARE ASSOCIATED INFECTIONS BASED ON POINT PREVALENCE SURVEY AND HOSPITAL-WIDE SURVEILLANCE

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Purpose: Analyze the data of survey on point prevalence of healthcare associated infections and hospital-wide surveillance of a tier-3 first-class hospital to compare the difference and applicability of the above two methods in obtaining the disease burden of hospital infection, providing basis and reference for hospitals of different scales in different areas to monitor hospital infection.

Methods: The epidemiological cross-sectional survey was carried on from April 10th, 2014 to investigate nosocomial infection current prevalence through looking up cases by the hospital infection management full-time and part-time staff and bed-assistance survey; and the hospital infection management professionals collected data about hospital infection of in-hospital patients daily through hospital infection monitoring software for full comprehensive monitoring from January 1st, 2013 to December 31st, 2013 by prospective monitoring method.

Results: The hospital infection prevalence was 3.7% (36/984), intensive care unit (10.0%) > internal medicine (4.4%) > surgical department (1.0%), in addition, lower respiratory tract (21, 53.8%), surgical site (5, 12.8%), urinary tract (4, 10.3%), skin and soft tissue (2, 5.1%) and blood infection (2, 5.1%) were the top five infectious parts; the results of hospital-wide surveillance showed that the incidence was 1.06% (341/29533), the infection rate in care unit (3.49%) > surgical infection rate (1.05%) > medical infection rate (0.96%), with lower respiratory tract (124, 39.5%), surgical site (64, 20.4%), urinary tract (3, 11.8%), upper respiratory tract infection (33, 10.5%) and unknown site infection (19, 6.1%); the calculated hospital-wide prevalence was 1.03%, which was slightly below the daily monitoring incidence level (1.06%) in 2013.

Conclusion: In areas in absence of manpower and material resources and with relatively backward information, surveys on hospital infection prevalence rate, instead of hospital-wide surveillance which needs more manpower and material resources, can be regularly carried out, in order to understand the risk factors and disease burden of infection in regional hospitals, providing data support for carrying on prevention and control measures of hospital infection and implementing the best practice.

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INFLUENCE OF WOLBACHIA ON MALAYSIAN AEDES ALBOPICTUS

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Purpose: *Wolbachia* is an intracellular bacteria found in most nematodes and arthropods. *Aedes albopictus* is a native host for *Wolbachia* which makes it the ideal host to study influence of *Wolbachia*. *Aedes albopictus* does not cause huge epidemics of dengue as *Ae. aegypti*. *Aedes aegypti* is naturally uninfected with *Wolbachia*. Perhaps *Wolbachia* could be reason for the incapacity of *Ae. albopictus* to cause epidemics. This study has been conducted to study the effect of *Wolbachia* on *Ae. albopictus* fecundity, longevity and egg viability. In addition studies were conducted to determine the effect of *Wolbachia* on *Ae. albopictus* susceptibility towards dengue virus.

Methods: *Wolbachia* free *Ae. albopictus* colony were developed to study difference in fecundity, longevity and egg viability between *Wolbachia* infected and uninfected colonies. Dengue virus susceptibility studies were